PA - 2395

The Experience of Conversion of Oil-Fired Open-Hearth
Furnaces to Natural Gas-Firing.

connection with oxygen-blowing are improved. The change of the
construction of the heads would be purposeful. The gas mazout
burner developed by M.E.Groshev used in the mill cannot be re-
garded as perfect. The stabilization of the gas-mazout pressure
before the burner is very important. In order to reduce the use
of compressed air a natural gas compressed to an atmospheric
excess pressure of 10 would have to be tried as sprayer. The
consumption of mazout when using natural gas is very great (up
to 37 % of the heat introduced into the furnace). For this reason
experiments had to be carried out with the use of cracked natural
gas in place of mazout. (7 illustrations).

ASSOCIATION: "Krasnyy Oktyabr'" Steel Mills.
PRESENTED BY:
SUBMITTED:
AVAILABLE: Library of Congress.
Card 2/2

Borodin, V. P.

133-2-4/19

AUTHORS: Borodin, V.P., Darmanyan, P.E., Yudson, A.A. and Vasil'yev, A.V. (Engineers)

TITLE: A Four-Period System of the Complex Automatic Control of Thermal Conditions of a Fuel-Oil Fired Open Hearth Furnace (Chetyrekhperiodnaya skhema svyazannogo avtoregulirovaniya teplovogo rezhima mazutnoy martenovskoy pechi)

PERIODICAL: Stal', 1958, Nr 2, pp.114-120 (USSR)

ABSTRACT: A scheme of automatic control of thermal conditions of oil-fired open hearth furnaces developed by the Central Laboratory of Automation and installed on the Nr 10 furnace of the above works is described. The scheme operates according to four programmes corresponding to four technological periods of the smelting process. Programme 1 includes a considerable part of the charging period and two thirds of the melting period; it is switched on by a motor relay of time, operated by photorelay during the tapping of steel. Programme 2 includes the remaining part of the smelting period; it is switched on by a motor relay of time operated when a stable excess in the preset roof temperature is attained. Programme 3 includes the refining period and is switched on by a motor relay of time operated at the moment of tapping slag. Programme 4 includes the fettling period

Card 1/2

133-2-4/19

A Four-Period System of the Complex Automatic Control of Thermal
Conditions of a Fuel-Oil Fired Open Hearth Furnace.

and the beginning of the charging period of the next heat.
Changing of programmes can also be hand operated. The
scheme is shown in Fig.1. Fuel consumption is controlled
according to the temperatures of the roof and regenerators.
The following parameters are controlled: consumption of
fuel oil, air-fuel ratio, amount of compressed air used in
the atomiser, pressure of gases in the furnace, reverses,
waste gas temperature at the bottom of the regenerators and
draught in the waste gas flue. Characteristic data on the
furnace on which the scheme was operated, operating prac-
tice and operating results are briefly described. The
scheme operated satisfactorily, but the final conclusion
regarding the efficiency of the scheme can be made only
after an analysis of operating results of a few furnace
campaigns. There are 9 figures.

ASSOCIATION: "Krasniy Oktyabr" Works and TsLA (Zavod "Krasnyy
         Oktyabr'" i TsLA)

AVAILABLE: Library of Congress.

Card 2/2

PAKHALUYEV, Konstantin Mikhaylovich, inzh.; BORODIN, Viktor Pavlovich, inzh.; DARMANYAN, Petr Emmanuilovich, inzh.; SOLGANIK, G.Ya., vedushchiy red.; POLOSINA, A.S., tekhn.red.

[Use of natural gas in metallurgical furnaces] Primenenie prirodnogo gaza v metallurgicheskikh pechakh; opyt stalingradskogo zavoda "Krasnyi Oktiabr'." Moskva, Gos.nauchno-tekhn.izd-vo neft. i gorno-toplivnoi lit-ry, 1959. 110 p.

(Gas, Natural)   (Metallurgical furnaces)   (MIRA 12:10)

BORODIN, V.P.; MARCHENKOVSKIY, G.F.; DARMANYAN, P.E.; YUDSON, A.A.;
    KUROCHKIN, B.N.

    Furnace operations with heat insulated arches. Metallurg 6 no.2:
    15-17 F '61.
                                                      (MIRA 14:1)

    1. Zavod "Krasnyy Oktyabr'" i Vsesoyuznyy nauchno-issledovatel'skiy
    institut metallurgicheskiy teplotekhniki.
        (Open-hearth furnaces)   (Refractory materials)

KOLOBOV, P.I.; BORODIN, V.P.; DARMANYAN, P.E.; BURMISTROV, A.G.;
VOSKRESENSKIY, Yu.S.

Operation of recuperator soaking pits with one top burner
heated by natural gas. Stal' 22 no.6:566-572 Je '62.
(MIRA 16:7)
1. Zavod "Krasnyy Oktyabr'" i TSentroenergochermet.
(Furnaces, Heating)

PAKHALUYEV, K.M.; KUZOVNIKOV, A.A.; NOVIK, G.P.; BORODIN, V.P.; SOBOLEV,
A.A.; ZUBKOVA, N.M.

Industrial operation of holding furnaces fired by natural gas
for direct low-oxidation heating. Stal' 25 no.10:957-961
O '65.   (MIRA 18:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut
metallurgicheskoy teplotekhniki i zavod "Krasnyy Oktyabr'".

BoRoDiN, V. P.

USSR/Medicine - Tularemia, Epidemiology

FD-2594

Card 1/1   Pub. 148 - 5/25

Author   : Olsuf'yev, N. G.; Kucheruk, V. V.; *Makarov, N. I.; *Borodin, V. P.;
              Petrov, V. G.; and Selyanin, Ye. P.

Title   : The structure of a natural reservoir of river valley type tularemia

Periodical : Zhur. mikro. epid. i immun. 4, 27-31, Apr 1955

Abstract   : The results of a three year study of the ecological relationships
              between the rodents and insects which act as hosts and vectors of
              Pasteurella tularensis in an unnamed river valley in the USSR are
              given. Epizootic and epidemiological data reveal the connections
              between the yearly flooding of the valley and outbreaks of tula-
              remia among its animal and human inhabitants. Mosquitoes, gnats,
              and horse-flies act as mechanical vectors. The ticks, Dermacentor
              marginatus and Rhipicephalus rossicus, maintain the infection dur-
              ing the interepidemic period and constantly transmit it to the
              water rats, Arvicola terrestris, and other mouse-like rodents.
              The names of the 12 scientists who carried out the study are
              listed. No references are cited.

Institution : Institute of Epidemiology and Microbiology imeni Gamaleya (Director -
               G. V. Vygodchikov); Stalingrad Sanitary-Epidemiological Station
               (*Head - Cand Med Sci N. I. Makarov); Stalingradskaya Oblast
               Anti-Tularemia Station (*Head Physician - V. P. Borodin)
Submitted   : December 31, 1954

BORODIN, V P.

USSR/Medicine - Tularemia, immunology   FD-2601

Card 1/1   Pub. 148 - 12/25

Author   :   Olsuf'yev, N. G.; *Borodin, V. P.; Surnina, N. S.; and Tsvetkova, Ye. M.

Title   :   The allergenic characteristics of tulyarin from virulent, vaccine, and avirulent strains of tularemia microorganisms when administered supracutaneously and intracutaneously

Periodical :   Zhur. mikro. epid. i immun. 4, 58-63, Apr 1955

Abstract   :   The allergenic characteristics of tulyarin produced from virulent and vaccine strains were found to be identical. Persons with an active immunity or who had recovered from tularemia could be detected by the allergic reaction following the supracutaneous or intracutaneous administration of diluted tulyarin. The authors recommend the supracutaneous application of vaccine strain tulyarin to the forearm. The results of the experiments are presented on two charts. No references are cited.

Institution :   Institute of Epidemiology and Microbiology imeni Gamaleya; Stalingradskaya Oblast Antitularemia Station (Chief Physician - V. P. Borodin); and the Stalingrad Sanitary-Epidemiological Station (Head - N. I. Makarov)

Submitted   :   October 18, 1954

BORODIN, V.P.; KOROLEVA, A.P.

Results of extensive use of epicutaneous and "diluted" tularin
in typing the population for immunity. Zhur.mikrobiol. epid.
i immun. no.11:31-36 N '55.
                                                    (MLRA 9:1)

1. Iz Stalingradskoy oblastnoy protivotulyareminnoy stantsii
(glavnyy vrach V.P.Borodin)
      (TULAREMIA, diagnosis,
           tularin test, epicutaneous & diluted tests)

OLSUF'YEV, N.G.; TSVETKOVA, Ye.M.; BORODIN, V.P.; KOROLEVA, A.P.; SIL'CHENKO,
    V.S.; KHOROSHEV, I.G.; MYASNIKOV, Yu.A.; PERFIL'YEVA, Z.A.; KRATOKHVIL'
    N.I.; VAYSTIKH, M.A.; RAVDONIKAS, O.V.; BARANOVA, N.K.; ZIMINA, V.Ye.;
    TORMASOVA, L.N.; USTIN-PETROVA, T.F.; AREF'YEV, S.S.; KONKINA, N.S.;
    KUL'BA, A.P.; MAL'TSEVA, N.K.; SHELANOVA, G.M.; SORINA, A.M.; BRA-
    NITSKAYA, V.S.; PRUDNIKOVA, M.N.

Tularin from a vaccinal strain for epicutaneous use. Zhur. mikro-
biol.epid. i immun. 27 no.9:22-28 S '56.   (MLRA 9:10)

1. Iz Instituta epidemiologii i mikrobiologii im. N.F.Gamelei AMN
SSSR i protivotuliaremiynykh stantsiy Stalingradskoy, Voroneshskoy,
Tul'skoy, Plavskoy, Omskoy, Krasnodarskoy, Moskovskoy i Smolenskoy.
        (TULAREMIA, diagnosis,
            tularin epicutaneous test (Rus))

BORODIN, V.P.; SPITSYN, N.A.; SAMSONOVA, A.P.; KOROLEVA, A.P.; KHLYUSTOVA, A.I.

Two cases of tularemia caused ty the bite of the tick Rhipicephalus rossicus Jakim. et K.Jakim. Zhur.mikrobiol. epid. i immun. 27 no. 9: 49-51 S '56.

(MLRA 9:10)

1. Iz Stalingradskoy oblastnoy protivotulyaremiynoy stantsii (glavnyy vrach - V.P.Borodin)

    (TULAREMIA, tiology and pathogenesis,

     tick Rhipicephalus rossicus bite (Rus))

    (TICKS,

     Rhipicophalus rossicus bite causing tularemia (Rus))

BORODIN, V. P. Doc Cand Med Sci -- (diss) " Epidemiology and *prevention* prophylaxis of tularemia in the Volga-Akhtuba [river] flood plain in on the construction *zone* area of the Stalingrad *Hydro* Water Power Station *Plant*."

Stalingrad, 1957. 8 pp 20 cm. (Stalingradskaya Oblast Anti-

Tularemia Station), 150 copies

(KL, 21-57, 106)

-103-

OLSUF'YEV, N.G.; YEMEL'YANOVA, O.S.; UGLOVOY, G.P.; SIL'CHENKO, V.S.;
    BORODIN, V.P.; SAMSONOVA, A.P.; KONKINA, N.S.; SHELANOVA, G.M.;
    LEVACHEVA, Z.A.; TSAREVA, M.I.; ZYKINA, N.A.; LEBEDEVA, T.F.

Result of mass use with human subjects of dry tularemia vaccine
prepared from restored Gaiskii No.15 and Emelianova No.155 strains.
Zhur.mikrobiol.epid. i immun. 29 no.3:52-57 Mr '58. (MIRA 11:4)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamalei AMN SSSR,
Voronezhskoy, Stalingradskoy, Moskovskoy, Tul'skoy oblastnykh, Altayskoy
krayevoy sanitarno-epidemiologicheskikh stantsii i Omskogo instituta
epidemiologii i mikrobiologii.
             (TULAREMIA, immunology,
                vaccine, dry from Gaiskii's No.15 & Emelianova's No.155
                strains, mass application (Rus)

BORODIN, V.P.; SAMSONOVA, A.P.; KOROLEVA, A.P.

Two cases of allergic reactions to bites by infected ticks from the
family Rhipecephalus rossicus in subjects vaccinated against tularemia.
Zhur. mikrobiol. epid. i immun. 29 no.11:117-118 N '58. (MIRA 12:1)

1. Iz Stalingradskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
       (TULAREMIA, immunology,
              allergic reactions to infected Rhipecephalus rossicus bite
              in vaccinated patients (Rus))
   (TICKS,
              Rhipecephalus rossicus, allergic reactions in subjects
              vaccinated against tularemia to bites of infected ticks
              (Rus))

SAMSONOVA, A.P.; BORODIN, V.P.; KLOPOVA, Z.M.

Evaluation of a rapid diagnostic method for tularemia in animals. Zhur.mikrobiol.epid. i immun. 30 no.3:26-28 Mr '59.
(MIRA 12:5)

1. Iz Stalingradskoy oblastnoy sanitarno-epidemiologicheskoy stantsii.
(TULAREMIA, diagnosis, rapid method in animals (Rus))

BORODIN, V.P.; SPITSYN, N.A.; SAMSONOVA, A.P.; KOROLEVA, A.P.; CHUNIKHIN, V.P.

Ravin-steppe type of natural focus of tularemia. Zhur.mikrobiol.
epid. i immun. 30 no.3:35-40 Mr '59.   (MIRA 12:5)

1. Iz Stalingradskoy oblastnoy sanitarno-epidemiologicheskoy
stantsii.
                (TULAREMIA, transm.
                        natural foci, ravine-steppe type of focus
                        (Rus))

POROKHIN, M. P., SPITSYN, M. A., SANSTSEVA, A. P., KOTGI?A, A. ?., CHRNCHIN, V. P.

"The ravin?-an?-?tepee t?pe of the natural focus of tularemia." p. 173.

Desystoye soveshchan'ye po parasitologicheskim problema? i prirodno?.ochagovym bleeznyam. 22-29 Oktyabrya 1959 g. (Tenth Conference on Parasitological Problems and Diseases with Natural Foci 22-29 October 19?9), Moscow-Leningrad, 19?9, Academy of Medical Sciences USSR and Academy of Sciences USSR, No. 1 24?rp.

Oblast Sanitary-Epidemiological Station /Stalingrad

OLSUF'YEV, N.G.; YEMEL'YANOVA, O.S.; UGLOVOY, G.P.; SIL'CHENKO, V.S.; KHOROSHEV,
    I.G.; YEZHOVA, Ye.N.; BESSONOVA, M.A. ; VEDENEYEVA, Ye. V.; AREF'YEV,
    S.S.; SHELANOVA, G.M.; SORINA, A.M.; BORODIN, V.P.; KOROLEVA, A.P.;
    SUVOROVA, A.Ye.; ONIKHIMOVSKAYA, V.A.; STOLYAROVA, A.D.; BYSTROVA,
    K.A.; REPINA, R.F.; MYASNIKOV, Yu.A.; LEVACHEVA, Z.A.; YEGIAZARYAN,
    K.K.; RAVDONIKAS, O.V.; SARMANEYV, A.P.

Optimal periods for testing skin reaction in subjects inoculated
against tularemia with a dry live vaccine and vaccinal, reactogenic
and immunogenic properties of this preparation. Zhur. mikrobiol.
epid. i immun. 32 no.6:92-98 Je '61.   (MIRA 15:5)

1. Iz otdela prirodnoochagovykh infektsiy Instituta epidemiologii
i mikrobiologii imeni Gamalei AMN SSSR, otdelov Osobo opasnykh
infektsiy Voronezhskoy, Leningradskoy, Moskovskoy, Smolenskoy,
Stalingradskoy, Tambovskoy, Tul'skoy, oblastnykh sanitarno-
epidemiologicheskikh·stantsiy i Omskogo instituta epidemiologii,
mikrobiologii i gigiyeny.
              (TULAREMIA)   (VACCINES)

YEMEL'YANOVA, O.S.; RAVDONIKAS, O.V.; YEGOROVA, L.S.; PANINA, N.V.;
    PILIPENKO, V.G.; RUDNEV, M.M.; SIL'CHENKO, V.S.; BESSONOVA, M.A.;
    UL'YANOVA, N.I.; VEDENEYEVA, Ye.V.; BORODIN, V.P.; SAMSONOVA, A.P.;
    MYASNIKOV, Yu.A.; LEVACHEVA, Z.A.

Approbation of an improved tularemia diagnosticum. Zhur.
mikroobiol., epid. i immun. 40 no.10:85-92 O '63.

(MIRA 17:6)

1. Iz Instituta epidemiologii i mikrobiologii imeni Gamaley
AMN SSSR, Omskogo instituta prirodnoochagovykh infektsiy,
Protivochumnogo instituta Kavkaza i Zakavkaz'ya, Voronezhskoy,
Leningradskoy, Volgogradskoy, Tul'skoy sanitarno-epidemiologicheskikh
stantsiy.

OLSUF'YEV, N.G.; KUCHERUK, V.V.; BORODIN, V.P.; PETROV, V.G.; UGLOVOY, G.P.;
KULIK, I.L.; NIKITINA, N.A.; SAMSONOVA, A.P.; YERMOLOVA, A.D.; SPITSYN,
N.A.

Changes in the conditions of existence of the natural tularemia focus
in the northern part of the Volga-Akhtuba flood plain area in connection
with the construction of the Volgograd Hydroelectric Power Station.
Zhur. mikrobiol., epid. i immun. 40 no.11:127-132 N '63.
(MIRA 17:12)

BORODIN, V.P., (Novosibirsk); VOYTSEKHOVSKIY, B.V. (Novosibirsk); MIKHAYLOV, V.V. (Novosibirsk)

Use of the tensometric method in measuring high-speed high-pressure pulsewise jets. PMTF no. 6:104-108 N-D '63.

(MIRA 17:7)

L 61929-65   EWT(1)/EWP(m)/T/EED(b)-3   Pd-1/Pae-2   IJP(c)
ACCESSION NR: AP5018203   UR/0207/65/000/003/0100/0102

AUTHOR: Borodin, V. P. (Novosibirsk); Voytsekhovskiy, B. V. (Novosibirsk)

TITLE: The use of flash photography for studying high-pressure impulse jets

SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 3, 1965, 100-102

TOPIC TAGS: flash photography, high pressure impulse jet

ABSTRACT: A method has been devised to photograph fast-moving water jets using
electric discharge as pulse brightening. The short light-up time within the dis-
charge interval, about 3 μsec, does not practically allow the jet to advance. By
using several cameras placed along the jet trajectory it is possible to photograph
a high-pressure impulse jet of any length. Light-up time is synchronized with jet
ejection time by a simple time-delay switch fastened to the nozzle. The method is
being used by the Hydrodynamics Institute of the Siberian Branch of the Academy of
Sciences USSR, which has developed an impulse jet device emitting water jets that
attain velocities in excess of 1 km/sec. Orig. art. has: 6 figures.   [VM]

ASSOCIATION: none

Card 1/2

L 61929-65
ACCESSION NR: AP5018203

SUBMITTED: 16Jan65   ENCL: 00   SUB CODE: ME, ES

NO REF SOV: 002   OTHER: 000   ATD PRESS: 4061

Card 2/2

BORODIN, V.R.

Veterinary medicine in the Turkmen Republic. Veterinariia 34
no.12:50-54 D '57.   (MIRA 11:1)

1.Nachal'nik Upravleniya veterinarii Ministerstva sel'skogo
khozyaystva Turkmenskoy SSR.
(Turkmenistan--Veterinary medicine)

BORODIN, V.R., zasl. vet.vrach Turkmenskoy SSR; ABDURAKHMANOV, K., otv. red.; BERDYYEV, B., tekhn. red.

[Protection of farm animals from bacteriological weapons] Zashchita sel'skokhoziaistvennykh zhivotnykh ot bakteriologicheskogo oruzhiia. Ashkhabad, M-vo sel'.khoz. Turkmenskoi SSR, 1960. 29 p.
(MIRA 14:11)

(Domestic animals)   (Bacterial warfare)

BORODIN,V.S.

Fourth scientific Shevchenko conference. Visnyk AN URSR 26
no.5:74-76 My '55.   (MIRA 8:8)
        (Shevchenko, Taras Grigor'evich, 1814-1861)

89128

6.9400

S/108/61/016/002/001/011
B107/B212

AUTHOR: Borodin, V. S., Member of the Society of Radio Engineering
             and Electric Communication

TITLE: Approximate calculation of a distribution function for a
             normal process at the output of a standard radio component

PERIODICAL: Radiotekhnika, v. 16, no. 2, 1961, 3-8

TEXT: In order to estimate the noise-proof feature of a radio system
it is sometimes necessary to know the distribution law for the instantaneous
values of the noise at the output of a radio component, which consists
of a linear input component, a non-linear component and a linear output
component that are connected in series. This paper brings an approximate
calculation of a distribution function at the output of such a standard
component. This distribution occurs if a normal random process with a white
noise spectrum is applied to the input. The calculation has been done for
the following circuit:

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Approximate calculation ...   87128   S/108/61/016/002/001/011
                                        B107/B212

input

| RC filter | → | square-law detector | → | RC filter | → output |

$\alpha = \dfrac{1}{R_1 C_1}$

$\beta = \dfrac{1}{R_2 C_2}$
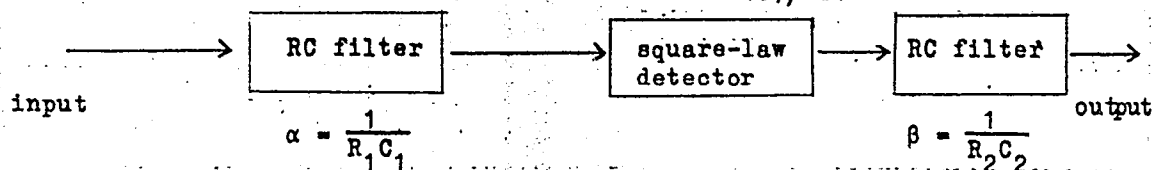
The calculation consists in representing the desired distribution function as a series; its coefficients are a function of the distribution cumulants. The latter can be calculated in different ways. This paper brings two methods. One of these expresses the cumulants of the voltage distribution at the output by eigenfunctions λ_j of the linear homogeneous integral equation

$$\lambda_j g_j(v) = \int_0^\infty \psi(v - u) h_2(u) g_j(u)\, du \qquad (1)$$

in the form of

$$\kappa_m = 2^{m-1}(m-1)!\lim_{n\to\infty} \sum_{j=-n}^{+n} \lambda_j^m \qquad m = 1, 2, \ldots \qquad (2).$$

$\varphi(v-u)$ is the correlation function of the signal at the input of the first linear component; $h_1(u)$ is its pulse transient function;

$h_1(u) = \alpha e^{-\alpha u}$; $h_2(u)$ is the pulse transient function of the second com-

Card 2/5

89128

Approximate calculation ...

ponent, $h_2(u) = \beta e^{-\beta u}$, λ_j, $g_j(v)$ and $g_j(u)$ are corresponding eigenvalues and orthogonal eigenfunctions of the integral equation. The first four distribution cumulants are obtained as:

$$
\left.
\begin{aligned}
\kappa_1 &= \psi_0 \\
\kappa_2 &= \frac{2}{\left(\frac{2\alpha}{\beta}+1\right)}\psi_0^2 \\
\kappa_3 &= -\frac{16}{\left(\frac{2\alpha}{\beta}+1\right)\left(\frac{2\alpha}{\beta}+2\right)}\psi_0^3 \\
\kappa_4 &= \frac{48\left[5\left(\frac{2\alpha}{\beta}\right)+6\right]}{\left(\frac{2\alpha}{\beta}+1\right)^2\left(\frac{2\alpha}{\beta}+2\right)\left(\frac{2\alpha}{\beta}+3\right)}\psi_0^4
\end{aligned}
\right\}
\qquad (6)
$$

The other method finds an expression for the cumulant of m-th order by iteration of the kernels of corresponding order

$$K_M = (2\sigma^2)^m \frac{m!}{2}\frac{1}{m}\int_{-\infty}^{\infty} K^{(m)}(u,u)\,du,\quad \text{where } \sigma^2 \text{ is the dispersion of the noise}$$

Card 3/5

89128

Approximate calculation ...   S/108/61/016/002/001/011
                                               B107/B212

signal. This method has been used to calculate the first and second-order
cumulants. The calculation of the third-order cumulants is already very
complicated. The results of both methods are equal. The probability
density function of the signal at the output of the standard component
is represented by a number of Laguerre's polynomials. Fig. 2 shows the
probability density function $p(E)$ for various values of $\frac{2\alpha}{\beta}$. Figs. 3 and
4 show the coefficients $\gamma_1 = \frac{K_3}{K_2^{3/2}}$ and $\gamma_2 = \frac{K_4}{K_2^2}$ as functions of $\frac{2\alpha}{\beta}$.

The distribution function becomes more and more symmetrical with increasing
$\frac{2\alpha}{\beta}$ and γ_2 decreases monotonely. The author thanks B. R. Levin and V. I.
Siforov for assistance. There are 4 figures and 5 references: 1 Soviet-bloc
and 4 non-Soviet-bloc.

SUBMITTED: April, 1960 (initially)
              June 22, 1960 (after revision)

Card 4/5

Approximate calculation

89128

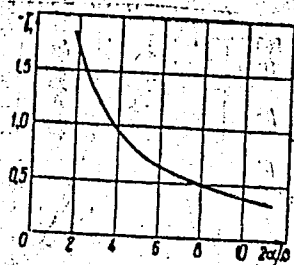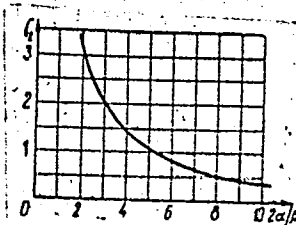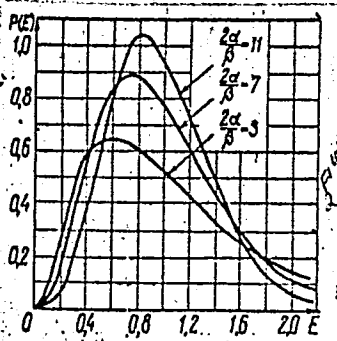S/108/61/016/002/001/011
B107/B212

Fig. 3

Card 5/5

Fig. 4

BORODIN, V.S.

Reply to IU.S. Lezin and B.D.Zabegalov's remarks. Radiotekhnika
18 no.8:69 Ag '63.   (MIRA 16:10)

1. Deystvitel'nyy chlen Nauchno-tekhnicheskogo obshchestva
radiotekhniki i elektrosvyazi imeni Popova.

BORODIN, V.S.; KAGAN, Yu.M.

Discharge in a hollow cathode. Opt. i spektr. 18 no.6:966-
967 Je '65.   (MIRA 18:12)

L 21759-66   EWT(1)/EWT(m)/ETC(f)/EPF(n)-2/EWG(m)/T/   IJP(c)   AT/DS

ACC NR: AP6004896   SOURCE CODE: UR/0057/66/036/001/0181/0185

AUTHOR: Borodin, V.S.; Kagan, Yu.M.

ORG: Leningrad State University im. A.A.Zhdanov (Leningradskiy gosuniversitet)

TITLE: Investigation of the discharge in a hollow cathode. 1. Comparison of the electrical characteristics of a hollow cathode and a positive column

SOURCE: Zhurnal tekhnicheskoy fiziki, v. 36, no. 1, 1966, 181-185

TOPIC TAGS: gas discharge, helium, positive column, hollow cathode, electron distribution, velocity distribution, Maxwell distribution , electrode, electron energy

ABSTRACT: The authors have measured the electron density and velocity distribution in helium discharge positive columns and in hollow cathode helium discharges, using the technique previously employed by N.A.Vorob'yeva, Yu.M.Kagan, R.I.Lyagushchenko, and V.M.Milenin (ZhTF, 34, 146, 1964) to measure electron velocity distributions in positive columns. Two hollow cathodes with diameters of 2 and 1 cm and lengths of 5 and 10 cm, respectively, were investigated. The electron density and velocity distribution at the center of the hollow cathode and on the axis of a positive column of equal diameter were derived from the probe characteristics of 0.06 mm diameter 5 mm long cylindrical probes. Measurements were made at helium pressures from 0.9 to 3.5 mm Hg and discharge currents from 20 to 40 mA. Deviations from the Maxwellian distribution were

Card 1/2   UDC: 537.525.1

L 21759-66

ACC NR: AP6004896

observed at the higher pressures: in the hollow cathode there was an excess of high
energy electrons, and in the positive column there was a deficiency of high energy
electrons. The number of high energy electrons in the hollow cathode was maximum at
a certain optimum pressure that was higher for the smaller cathode than for the larger
one. The ratio of the number of electrons with energies from 6 to 13 eV to the number
with energies from 19 to 26 eV was nearly independent of pressure for the hollow cath-
ode and was small and exhibited a minimum as a function of pressure for the positive
column. The significance of these results for the interpretation of the spectra of
the discharges is discussed briefly. Orig. art. has: 3 formulas, 9 figures, and 1
table.

SUB CODE: 20/   SUBM DATE: 14May65/   ORIG REF: 004/   OTH REF: 000

Card 2/2

BORODIN, V . V.

Borodin, V. V. "Geophysical Prospecting for Pyritic Gold-Bearing Deposits in the Olkhov-Chibizheksk Region (West Siberia)." Vestnik Zapadno-Sibirskogo Geologo-Gidro-Geodezicheskogo Tresta, Tomsk, No. 1, 1935, pp. 50-60;

BORODIN, V. V.

<u>Borodin, V. V.</u> "Electrical Exploration in the Kuznetsk Basin." In the book:
Geofizicheskie Metody Razvedki v Zapadnoi Sibiri, Tomsk, 1935, pp. 114-133.

SOV/58-59-7-16036

AUTHOR: Borodin, V.Z.

TITLE: Circuit With a Ferroelectric Capacitor in the Presence of External Emf

ABSTRACT: Using the method of D.M. Kazarnovskiy (Elektrichestvo, 1953, Nr 10, p 68), the author carries out calculations for a network with a parallel circuit containing a ferroelectric capacitor.

Card 1/1

69201

?/144/60/000/02/015/019
E192/E182

AUTHOR: Borodin, V.Z., Aspirant

TITLE: Influence of a Biasing Electric Field on the Polarization Processes in Ferroelectrics

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy; Elektromekhanika, 1960, Nr 2, pp 140-146 (USSR)

ABSTRACT: The work described was concerned with the investigation of the polarization process in ferroelectrics subjected to a simultaneous action of a strong sinusoidal electric field and a constant biasing field. The main measured parameter was the differential permittivity ε_g which was determined on the basis of the experimentally taken hysteresis loops of the material. The permittivity ε_g was calculated from the oscillograms of the "current loops" which give the dependence of the instantaneous current i flowing through the investigated sample, on the instantaneous field E applied to the sample. The permittivity ε_g and the current i are related to each other by

$$\varepsilon_g = \frac{4\pi}{\omega S} \frac{i}{\sqrt{E^2_m - E^2}} \qquad (1)$$

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S/144/60/000/02/015/019
E192/E182

Influence of a Biasing Electric Field on the Polarization Processes in Ferroelectrics

where S is the area of the electrodes of the investigated sample and E_m is the amplitude of the applied field. The investigated samples were prepared from pure $BaTiO_3$. Before the tests the samples were heated to a temperature of 500 °C and then slowly cooled. The measurements were carried out 24 hours after the heat treatment. First only the variable field was applied and later the biasing field. The measurements were done at the temperature of 23 °C. The dependence of the differential permittivity on the value of the instantaneous electric field applied to the sample is plotted in Fig 2 for four different values of the biasing field. The amplitude of the alternating field was 14.6 kV/cm. The curves (a) of Fig 2 correspond to the rising portion of the hysteresis loop, while the curves (6) refer to the falling portion of the loop. By considering curve (a) it is seen that, while increasing the field from $-E_m$ to $+E_m$, the permittivity first rises rather slowly, then more rapidly, and reaches a maximum

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2/4

69201

S/144/60/000/02/015/019
E192/E182

Influence of a Biasing Electric Field on the Polarization Processes in Ferroelectrics

at $E = E_k$. Fig 3 shows the dependence of ε_g on the total field $E + E_0$ for various values of the biasing field E_0. It is seen that for E_0 the maxima of ε_g preserve the original position, but if E_0 increases, the maxima are shifted towards the right-hand side. The dependence of the position of the maxima of ε_g on the magnitude of the biasing field is illustrated in Fig 4. The above experimental data can be explained theoretically. From the investigation it is concluded that the application of a biasing field to a ferroelectric sample leads to a shift of the maxima of the differential permittivity of the material. Over a wide range of field strengths (up to $2E_k$, where E_k is the coercive force) the total field $E_0 + E$ corresponding to the maximum of ε_g is constant. However, this principle is not valid at very strong fields; this is due to the fact that an internal field caused by the domain regions is added to the external field. The author expresses his gratitude to A.L. Khodakov for directing this work and for valuable

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69201

Influence of a Biasing Electric Field on the Polarization Processes in Ferroelectrics

S/144/60/000/02/015/019
E192/E182

discussion of the results. There are 6 figures and 8 references, of which 2 are English, 5 Soviet and 1 German.

ASSOCIATION: Kafedra eksperimental'noy i teoreticheskoy fiziki, Rostovskiy gosudarstvennyy universitet (Chair of Experimental and Theoretical Physics, Rostov State University)

Card 4/4

SUBMITTED: December 4, 1959

9.2180

85014

S/048/60/024/010/023/033
B013/B063

AUTHOR: Borodin, V. Z.

TITLE: The Effect of Unilateral Pressure Upon the Processes of
               Polarization in Piezoceramics

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960,
               Vol. 24, No. 10, pp. 1264 - 1270

TEXT: The effect of unilateral pressure upon polarization was oscillo-
graphically studied on samples of ceramic $BaTiO_3$, solid solutions of
$BaTiO_3$-$BaSnO_3$, and on material of the type "ВАРИКОНД" (Varikond) with
increased non-linear properties. The results obtained for $BaTiO_3$ are
given. Also other materials were found to be subject to similar rules.
Fig.1 shows polarization curves for longitudinal compression. It may be
seen that polarization drops with an increase of σ. The slope of the
$P_m(E_m)$ curves is increased. The peak corresponding to the maximum of
the differential dielectric constant ε_d is shifted toward larger fields.
With an increase of the field, the function $P_m(\sigma)$ first increases and
then decreases gradually. Ceramic material previously placed in a strong

Card 1/2

85014

The Effect of Unilateral Pressure Upon the   S/048/60/024/010/023/033
Processes of Polarization in Piezoceramics   B013/B063

field exhibits a larger $P_m(\sigma)$ (Fig.2). When placed in a comparatively
weak field $(E < 3$ kv $cm^{-1})$, samples which were not treated with a strong
field show a change of $\varepsilon_d(E)$ that is similar to the one mentioned in
Ref.3. Fig.4 shows two polarization curves perpendicular to the pressure
axis for $\sigma = 0$ and $\sigma = 420$ kp/cm^2. The experimental results, part of
which are different in qualitative respect, may be satisfactorily ex-
plained. It is assumed that, due to the presence of internal electric
fields and mechanical stresses, ceramic materials contain a group of al-
most unstable domains. When external effects, such as a field or pres-
sure, act upon these domains, they pass over into a new state. A de-
struction of these domains entails a reverse effect (Ref.10). In this
case, $P(\sigma)$ in weak fields is increased by transverse pressure and de-
creased by longitudinal pressure. This fact probably explains also the
strong dependence of $P(\sigma)$ in the case of a transverse compression of
older samples. The author thanks A. L. Khodakov for supervising this
work, and V. D. Komarov for preparing the samples. The present paper was
read at the Third Conference on Piezoelectricity, which took place in
Moscow from January 25 to 30, 1960. There are 4 figures and 10 ref-
erences: 6 Soviet and 1 German.

Card 2/2

BORODIN, V. Z., CAND PHYS-MATH SCI, "EFFECT OF EXTERNAL INFLUENCES ON ~~THE~~ PROCESSES ~~OF~~ POLARIZATION IN FERROELECTRIC CERAMICS TYPE $BaTiO_3$." [DNEPROPETROVSK], 1961. (MIN OF HIGHER AND SEC SPEC ED UKSSR. DNEPROPETROVSK STATE UNIV IMENI 300TH ANNIVERSARY OF THE REUNIFICATION OF UKRAINE AND RUSSIA).

(KL-UV, 11-61, 208).

-4-

KHODAKOV, Abram Lazarevich[deceased], kand. fiziko-matematicheskikh nauk, dotsent;
BORODIN, Viktor Zakharovich, assistent

Effect of the operating modes of electrical networks on the
parameters of seignetoelectric capacitors. Izv. vys. ucheb.
zav.; elektromekh. 5 no.11:1280-1288 '62.

(MIRA 16:1)

1. Kafedra eksperimental'noy i teoreticheskoy fiziki Rostovskogo
gosudarstvennogo universiteta.

(Electric networks)   (Condensers(Electricity))

L 57559-65   EWT(1)/EPA(s)-2/EWT(m)/EPF(n)-2/EEC(t)/T/EWP(t)/EWP(b)/EWA(c)   Pt-1/
Pu-4/Pi-4   IJP(c)   JD/WW/JG/GG
ACCESSION NR: AP5016141   UR/0048/65/029/006/1005/1008

AUTHOR: Sholokhovich,M.L.; Berberova,L.M.; Borodin,V.Z.; Lezgintseva,
T.N.

TITLE: Effect of the growth conditions on the properties of some
doped barium titanate crystals/Report, 4th All-Union Conference on
Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR.Izvestiya.Ser.fizicheskaya,v.29,no.6,1965,1005-1008

TOPIC TAGS: ferroelectric crystal, barium titanate, doping, silicon,
germanium, tin, zirconium, hafnium

ABSTRACT: BaTiO$_3$ crystals doped with Si, Ge, Sn, Zr or Hf were grown
from solutions in fused KF and some of their properties were examined.
In each case the oxide of the dopant was present in the solution at a
concentration of 1 mole percent. The crystals were grown in two some-
what different ways. In the first series the mixture in the fused KF
was held at 1140° for 6 hours and then cooled to 900° or 950°. In this
series the solution always contained a sludge of undissolved BaTiO$_3$.

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L 57559-65
ACCESSION NR: AP5016141

The crystals obtained by this procedure were in the form of laminated twins. In the second series the mixture was held at 1180° until solution was complete and then cooled slowly to 840°. $BaTiO_3$ crystals obtained in this way are ordinarily cubes, but in this case the presence of the dopant affected the crystal form. The concentration of dopant in the final crystal was small and was not affected by prolonged heating. The concentrations of Si, Sn, Zr, Hf and Ge were 0.5, 0.5, 0.1, 0.05 and 0.01 percent by weight, respectively. The domain structure was affected by some of the dopants; this is discussed briefly. Doping the crystals with Sn, Zr and Hf did not change the temperature dependence of the dielectric constant. In the Si and Ge doped crystals the dielectric constant showed a small washed out maximum at a temperature somewhat below the Curie point. This is ascribed to the change in the number of a-domains with temperature. Prolonged application of a 2 kV/cm alternating field caused a gradual change in the shape of the hysteresis loop, particularly in the case of the Si doped crystals. Except for the Hf doped crystals, the saturation polarizations were between 1.0×10^{-5} and 1.8×10^{-5} C/cm^2. The saturation polarization of the Hf doped crystals was 2.5×10^{-5} C/cm^2. The

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L-57559-65
ACCESSION NR: AP5016141

starting fields (the field at which a rapid rise of polarization be-
gins) were increased from about 500 V/cm for pure BaTiO3 to between
750 and 950 V/cm for the doped crystals. Orig.art.has: 4 figures.

ASSOCIATION: Nauchno-issledovatel'skiy fiziko-matematicheskiy insti-
tut Rostovskogo-na-Donu gosudarstvennogo universiteta (Physico-mathe-
matical Scientific Research Institute, Rostov-on-the-Don State Uni-
versity)

SUBMITTED: 00   ENCL: 00   SUB CODE: SS, IC

NR REF SOV: 003   OTHER: 006

Card 3/3

L 7824-66   EWT(1)/EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/EWP(t)/EWP(b) IJP(c)

ACC NR: AP 5028101   JD/GG/WH

SOURCE CODE: UR/0048/65/029/011/1982/1985

AUTHOR: Borodin, V.Z. ; Kuznetsov, V.G. ; Lezgintseva, T.N.

ORG: Rostov-on-the-Don State University (Rostovskiy-na-Donu Gosudarstvennyy universitet)

TITLE: Dielectric and optical investigations of barium titanate single crystals in the infralow frequency range /Report, Fourth All-Union Conference on FerroO electricity held at Rostov-on-the-Don 12-16 September 1964/

SOURCE: AN SSSR. Izvestiya, Seriya fizicheskaya, v. 29 no. 11, 1965, 1982-1985

TOPIC TAGS: Ferroelectric crystal, barium titanate, dielectric constant, electric coercive force, electric domain structure, extreme low frequency.

ABSTRACT: The polarization, effective dielectric constant, and coercive field of thin (0.02 to 0.2 mm) $BaTiO_3$ single crystal plates with different domain structures were measured at frequencies between 10^{-2} and 10^4 cycle/sec. The reversible dielectric constant was measured at a carrier frequency of 150 kilocycle/sec in the presence of a very low frequency bias field. In addition to this, the behavior under the influence of low frequency fields of single a-domains in the midst of o-domains was observed with a polarizing microscope. At frequencies below about 50 cycle/sec the effective dielectric constant as a function of the amplitude of the measuring field showed a pronounced maximum at an amplitude in the vicinity

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L 7824-66

ACC NR: AP 5028101   3

of 1 KV/cm; the maximum dielectric constant increased rapidly with decreasing
frequency and the position of the maximum shifted slightly to lower amplitudes.
The coercive field decreased gradually with decreasing frequency, reached a mini-
mum at a frequency that depended on the amplitude of the applied field, and subse-
quently increased to the static value. The changes in thickness of a-domains were
observed in 0.2 cycle/sec fields. At low amplitudes of the applied field the
domains oscillated at the applied frequency, but at high amplitudes the domains
oscillated at twice the applied frequency. An analogous transition from fundamental
to second harmonic domain oscillation was observed on decreasing the frequency while
maintaining the amplitude constant. When oscillating at the second harmonic, the
domains reached their greatest size when the applied field passed through the value
of the coercive field. The relation between domain oscillation and other dielectric
properties of the crystal is discussed briefly. The authors thank M.L.Sholokhovich/SS
for providing the single crystals. Orig. art. has: 1 formula and 5 figures.

SUB CODE: SS, EM   SUBM DATE: 00/   ORIG.REF. 005   OTH REF: 002

Card 2/2

L 7839-66   EWP(e)/EPA(s)-2/EWT(m)/EWP(i)/EPA(w)-2/T/EWP(t)/EWP(b)/EWA(c)

ACC NR: AP 5028102   IJP(c)   JD/WH   SOURCE CODE: UR/0048/65/029/011/1986/1990

AUTHOR: Borodin, V.Z.

ORG: Rostov-on-the-Don State University (Rostovskiy-na-Donu Gosudarstvennyy universitet)

TITLE: Investigation of the reversible dielectric constant of barium titanate single crystals /Report, Fourth All-Union Conference on Ferro-electricity held at Rostov-on-the Don 12-16 September 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 11, 1965, 1986-1990

TOPIC TAGS: Ferroelectric crystal, barium titanate, dielectric constant, dielectric polarization, single crystal, electric domain structure.

ABSTRACT: The reversible dielectric constant of barium titanate single crystals containing 70-90% c-domain regions on the visible surface was measured at room temperature with a 150 kilocycle/sec field in the presence of a constant or slowly varied bias field. The specimens were 0.15-0.05 mm thick plates, and contact was made with liquid electrodes of saturated LiCl solution. When the bias field was varied slowly between the limits ± 400 V/cm the dielectric constant passed through a pronounced minimum as the bias field increased (in absolute value) through the value of the coercive field, but remained constant while the bias field was decreasing. This minimum is ascribed to the domain clamping effect of M.E.Drougard

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L 7839-66

ACC NR: AP 5028102

and D.R. Young (Phys. Rev., 94, 1561 (1954)). Measurements were made in which the bias field was changed in sudden steps. When the value of the bias field was far from that of the coercive field, the dielectric constant increased suddenly when the bias was increased and decreased to its final value in 10 to 15 minutes. The agreement of this polarization reversal time with the 20 minute polarization switching time found by H. H. Wieder (J. Appl. Phys., 27, 414 (1956)) can be considered satisfactory if account is taken of the fact that Wieder used metallic electrodes. When the value of the bias field was close to that of the coercive field the sudden increase of the dielectric constant did not occur. The effect of preliminary poling for one hour in a 500 kV/cm field was investigated. The relation between reversible dielectric constant and bias field was similar to that for untreated samples when the bias field was in the direction of the preliminary polarization. When the bias field was in the opposite direction, however, the minimum in the dielectric constant near the coercive field was very shallow and there was a very pronounced maximum at a somewhat lower bias. When the bias field was varied cyclically at low frequencies (0.02 to 0.5 cycle/sec), the dielectric constant minima that appear in slowly varied bias fields when the value of the bias field increases through that of the coercive field changed to maxima in higher frequency bias fields. Possible explanations of the observed phenomena are discussed briefly in terms of domain polarization reversal, domain wall displacement, and space charge effects. Preliminary polarization in a strong constant field inhibits the domain clamping effect. Orig. art. has: 5 figures.

SUB CODE: SS, EM   SUBM DATE: 00/-   ORIG. REF: 002   OTH REF: 008
       nW

Card   2/2

BORODIN, Ya. F.; BURSHTAR, M.S.

Geological development and oil and gas potentials of eastern
Stavropol Territory. Geol. nefti i gasz 5 no.6:11-16 Je. '61.
                                        (MIRA 14:6)

1. Stavropol'skiy sovnarkhoz i Vsesoyuznyy nauchno-issledovatel'-
skiy geologorazvedochnyy neftyanoy institut.
                    (Stavropol Territory—Petroleum geology)
                    (Stavropol Territory—Gas, Natural—Geology)

BORODIN, Yevgeniy Ivanovich; BUBNOV, N.A., red.; BUKOVSKAYA, N.A.,
    tekhn.red.

[Unity and friendship; how the national economy of the Soviet
republics will be developed during the seven-year plan] Edinstvo
i druzhba; kak budet razvivat'sia narodnoe khoziaistvo sovetskikh
respublik v semiletke. Moskva, Voen.izd-vo M-va obor.SSSR,
1960. 86 p.   (MIRA 13:5)
            (Russia--Economic policy)

BORODIN, Ye. S.

Borodin, Ye. S. -- "Experimental Application of Grafting as a Method for Increasing Early Ripening and Improving Certain Features of Cotton." Cand Biol Sci, Central Asia State U, 12 Feb 54. (Pravda Vostoka, 30 Jan 54.)

SO: SUM 168, 22 July 1954

USSR/Cultivated Plants. Technical Plants. Oil and   H
Sugar Bearing Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68260

Author   : Borodin, Ye. S.
Inst   : University of Central Asia.
Title   : Selecting Grafting Components in Vegetative
           Hybridization of Cotton.

Orig Pub : Tr. Sredneaz. un-ta, 1956, No 79, 101-116

Abstract : Experiments were performed with strains of
           four cotton species (Gassipium hirsutum, G.
           barbadense, G. arboreum, and G. herbaceum).
           F_1, F_2, and F_3, obtained from grafts, are
           described. The character of the cleavage of
           these generations is analyzed, and there is
           a discussion of problems of selecting graf-

Card   : 1/3

USSR/Cultivated Plants. Technical Plants. Oil and   M
            Sugar Bearing Plants.

Abs Jour : Ref Zhur-Biol., No 15, 68260

ting components in vegetative hybridizations,
as well as of the possibility of intensifying
hereditary variations in vegetative hybrids
by using reflexive-repetitive grafts. On the
basis of the experiments, the following re-
commendations are given: 1. to acquire ini-
tial forms containing the valuable qualities
of existing commercial long-fiber varieties
with more rapid maturation by grafting quick-
maturing varieties (types 611-B, 1306) onto
varieties of 108-F and C-1225 types; 2. to
increase stalk strength in the seed heredity
by using varieties characterized by resistance
to stalk tumbling as rootstock (for example,

Card   : 2/3

108

USSR/Cultivated Plants. Technical Plants. Oil and   M
Sugar Bearing Plants.

Abs Jour : Ref Zhur-Biol., No 15, 1958, 68260

K-317, 2, and 3); 3. in grafts on wilt-resistant rootstocks, heightened wilt-resistance can be expected as early as the second generation; 4. in inter-species graftings (G, hirsutum on G. herbaceum and G. arboreum), significant variations in the scions may be expected due to the influence of the rootstocks; 5. reflexive-repetitive grafts heighten the hereditary variations of the scion. -- N. N. Konstantinov

Card   : 3/3

BORODIN, Ye.S.

Fedor Nikolaevich Rusanov; 25th anniversary of his activities in
the field of plant introduction and acclimatization. Uzb.biol.zhur.
no.5:70-72 '59.   (MIRA 13:4)
                    (RUSANOV, FEDOR NIKOLAEVICH, 1895-)

RAYKOVA, I.A.; BORODIN, Ye.S.

Changes in the ontogenesis of the old-world winterfat (Eurotia ceratoides C. A. M.) under the conditions of Tashkent. Trudy TashGU ; no.187:149-158 '61.   (MIRA 15:3)

1. Tashkentskiy gosudarstvennyy universitet imeni Lenina i Botanicheskiy sad AN UzSSR.
                         (Tashkent region--Winterfat)

BORODIN, Ye.S.; RAYKOVA, I.A.

Early plants in Tashkent. Trudy Pom. biol. sta. 1:249-258 '63.
(MIRA 17:10)
1. Tashkentskiy universitet im. Lenina i Botanicheskiy sad AN
UzSSR.

BORODIN, Ye. S.; RAYKOVA, I. A.;

"Shifts in ontogenesis and rhythms of plant development on introduction of plants from extreme highland conditions to flat-land conditions.

report submitted for 10th Intl Botanical Cong, Edinburgh, 3-12 Aug 64.

AS UzSSR.

L 09985-67   EWT(d)/EWT(m)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(1)   IJP(c)   JD/HW
ACC NR: AP6035653   (N)   SOURCE CODE: UR/0133/66/000/011/1025/1027

AUTHOR: Moiseyev, G. I.; Fotov, A. A.; Borodin, Yu. A.

ORG: none

TITLE: Tube rolling in KhPTR mill, with two roll sets

SOURCE: Stal', no. 11, 1966, 1025-1027

TOPIC TAGS: metal tube, seamless tube,   cold rolling, metal tube making facility

ABSTRACT: In an attempt to increase the productivity of KhPTR cold-rolling mills, a mill equipped with two roll sets (see Fig. 1) was tested. The first series of experi-
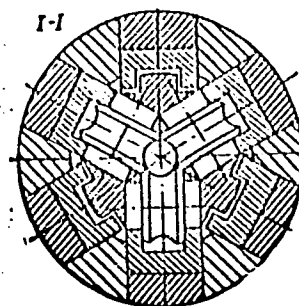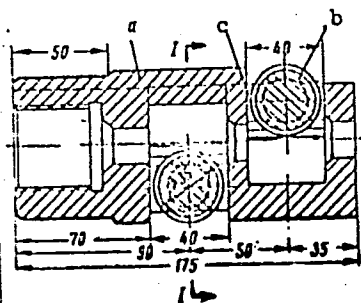
Fig. 1. Arrangement of rolls in a separator with two roll sets: a – separator; b – roll; c – spacer.

Card 1/2

UDC: 621.774.39

L 09985-67

ACC NR: AP6035653   0

ments was carried out with aluminum tubes 16 mm in diameter and 1.2 mm thick walls which were reduced to 14 mm diameter and 0.2 mm wall thickness. The new method was found to be highly effective. Tubes of satisfactory quality were obtained with a feed of 9 mm per stroke, while in conventional mills the tubes cracked at feeds exceeding 2.6 mm per stroke. Another series of experiments was carried out on stainless steel tubes with a diameter-to-wall-thickness ratio of 10—20. It was established that in this case the deviations in wall thickness of finished tubes were much smaller than those obtained in the conventional KhPTR mills. The main advantages of the new mill as compared to conventional ones are: smoother surfaces, more uniform thickness, and higher productivity. Introduction of this mill into the industry would increase the productivity of KhPTR mills about 1.2—1.8 times. Orig. art. has: 6 figures.

SUB CODE: 13, 14/ SUBM DATE: none/ ORIG REF: 002/ ATD PRESS: 5105

Card 2/2 egk

BORODIN, YU, I.

Borodin, Yu. I.

"The innervation of the lymphatic node beneath the knee in the cat
and the effect on nerves of the passage of liquid through the node."
Novosibirsk State Medical Inst. Chair of Normal Anatomy. Novosibirsk,
1956. (Dissertation for the Degree of Candidate in Medical Science)

So: Knizhnaya letopis', No. 25, 1956

21803

S/103/61/022/004/010/014
B116/B212

_16.9500 (1043, 1121, 1132)_

AUTHORS: Borodin, Yu. I., Plotnikov, V. N. (Moscow)

TITLE: Calculation of automatic control systems

PERIODICAL: Avtomatika i telemekhanika, v. 22, no. 4, 1961, 511-523

TEXT: A method is brought to calculate automatic control systems without a delay for objects of first and second order. This method may be applied to four different control types, and is generalized for systems with a delay. Nomographs are brought for selecting parameters of a wanted transfer function and for determining the controller type. The paper deals with the P-controller, I-controller, PI-controller, and PID-controller. The method applied realizes the synthesis of correction devices in automatic control systems, which is based on the selection of wanted logarithmic amplitude characteristic. Fig. 1a shows the circuit diagram of such an automatic control system. It consists of a controlled object having a transfer function $K_o W_o(s)$ and a controller having a transfer function $K_p W_p(s)$ but its type and parameter are unknown. The transfer function of many objects may be expressed by a formula given in Table 1. Table 2 shows the transfer func-

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Calculation of ...

tions of the control types mentioned. Primary characteristic values, which characterize the automatic stabilization system (Fig. 1b) are: 1) The maximum deviation x_{max} caused by a stepwise single interference; 2) the time T of the transient process caused by the same interference; 3) the time t_p where the deviation will reach a maximum; 4) the relative dynamic deviation $\eta_s = x_{21}/x_{11}$ (curve 1 of Fig. 1b represents the static system) resp. $\eta_a = x_{22}/x_{max}$ (for the astatic system curve 2) of the controlled variable which characterizes the form of the transient process; 5) the static error x_{st}, which is characterized by the deviation of the controlled variable from the rated value after the transient process caused by the stepwise single interference has ended. Figs. 2, 3, and 4 show nomographs which may be used to select wanted transfer functions of a closed system. They give an interrelation between the parameters of the transient process and the transfer function of the closed automatic control system. The transfer functions Y(s) of an automatic control system are shown in Table 3 for objects and controllers investigated. The nomographs have been constructed by using formulas that determine the relation between T, x_{max},

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21803
S/103/61/022/004/010/014
B116/B212

Calculation of ...

t_p, and η, and the parameters K, T_1, and ζ_1 (Table 4) of the transfer func-tion for a closed system. These formulas have been obtained by the inverse Laplace transformation. The nomograph shown in Fig. 2 has been constructed for the transfer function (10), that of Fig. 3 for (11) and that of Fig. 4 for (12). Figs. 5 and 6 show the nomographs for determining the type of controller by selecting a wanted transfer function of a closed system and by taking the transfer function of the object into account. Formula (8) in Table 2 is valid for a PID-controller. The PI-controller, formula (7), and the I-controller, formula (6) are considered to be special cases of the PID-controller. If the wanted transfer function has to be selected for first objects without delay the nomographs of Figs. 3 and 5 have to be used jointly (superposed), and the control parameters will be determined from the equations

$$\tau_p^2 = T_1^2 - \frac{K}{K_o} T_o \quad \text{and} \quad 2\zeta_p \tau_p = 2\zeta_1 T_1 - \frac{K}{K_o} \qquad (17).$$

The nomographs of Figs. 4 and 6 are used jointly for second order objects without delay and the control parameters are determined from the equation

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21803

Calculation of ...

$$T_o^2 \frac{K}{K_o} = T_1^3, \quad 2\zeta_o T_o \frac{K}{K_o} + \tau_p^2 = T_1^2(1 + 2\zeta_1), \quad \frac{K}{K_o} + 2\zeta_p \tau_p = T_1(1 + 2\zeta_1) \quad (22).$$

For objects with a plain delay, (formulas (3) and (4), Table 1) the nomograph of Fig. 9 is utilized for first order objects and that of Fig. 10 for second order objects. Formula

$$\tau_p^2 = T_1^2 - \frac{K}{K_o} T_o f_{11}, \quad 2\zeta_p \tau_p = 2\zeta_1 T_1 - \frac{K}{K_o} f_{21} \qquad (33)$$

will furnish the parameters of controllers with the first order objects and formula

$$\tau_p^2 = T_1^2 - \frac{K}{K_o} T_o f_{12}, \quad 2\zeta_p \tau_p = 2\zeta_1 T_1 - \frac{K}{K_o} f_{22} \qquad (36) \text{ those for}$$

second order objects. The corrections f_{11}, f_{21} caused by the delay are given in Table 5 and those for f_{12}, f_{22} in Table 2. There are 11 figures, 6 tables, and 13 references: 10 Soviet-bloc and 3 non-Soviet-bloc. The 2 references to the English-language publications read as follows: Chien K. L., Hrones J. A., Reswick J. B. On the automatic control of generalized passive systems. Trans. ASME, vol. 74, 1952, pp. 175-185; Mulligan J. H.

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5

Calculation of ...

The effect of pole and zero locations on the transient response of linear dinamic systems. Proc. Inst. of Rad. Eng., vol. 37, May, 1949.

SUBMITTED: October 31, 1960

Legend to Fig. 1: circuit diagram of the automatic control system (a) and the quality indices (b); $g(t)$ denotes the master influence ($g(t)$ = const), $f(t)$ the interference, $\varphi(t)$ the controlled variable, $x(t)$ the deviation of the controlled variable, $\mu(t)$ control influence; $x_{cm} = x_{static}$, $x_{макс} = x_{max}$.

Fig. 1
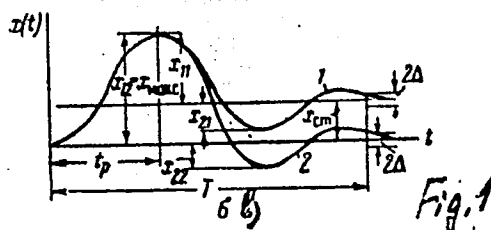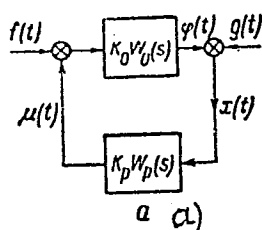
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BORODIN, Yu.I.

Apparatus for lymph node perfusion. Biul. eksp. biol. i med. 51 no.5: 124-125 My '61. (MIRA 14:8)

1. Iz kafedry normal'noy anatomii (zav. - prof. N.V. Romodanovskiy) Novosibirskogo meditsinskogo instituta (dir. - prof. G.D.Zalesskiy). Predstavlena deystvitel'hym chlenom AMN SSSR V.N.Ternovskim.
    (PHYSIOLOGICAL APPARATUS)   (LYMPHATICS)

KAMENSKAYA, V.V.; BORODIN, Yu.I.

Studying the transport function of lymphatic vessels in
animals. Izv. SO AN SSSR no.4. Ser. biol.-med. nauk
no.1:90-91'63.   (MIRA 16:8)

1. Institut eksperimental'noy biologii i meditsiny Sibirskogo
otdeleniya AN SSSR i Novosibirskiy meditsinskiy institut.
                    (LYMPHATICS)

KAMENSKAYA, V.V.; BORODIN, Yu.I.; MYSH, G.D.; KULIKOVA, L.A.; VOROB'YEV, V.N.

Methodology of determining the transport function of the blood
vessels and lymphatic system under experimental conditions.
Biul. eksp. biol. i med. 57 no.1:120-122 Ja '64.
                                        (MIRA 17:10)

1. Kafedra fiziki (ispolnyayushchiy obyazannosti zaveduyushchego
V.V. Kamenskaya) nornal'noy anatomii (zav. - prof. K.V. Romodanov-
skiy), fiziologii (zav. - dotsent Ya.D. Finkinshteyn), gospital'-
noy khirurgii (zav. - dotsent B.A. Vitsin) Novosibirskogo meditsin-
skogo instituta. Predstavlena deystvitel'nym chlenom AMN SSSR V.N.
Ternovskim.

BORODIN, Yu.I.

Functional and morphological transformations in the lymphatic
nodes in venostasis and the transport possibilities of the
lymphatic bed. Arkh. anat., gist. i embr. 49 no.11:53-59 N '65.
(MIRA 19:1)

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skogo meditsinskogo instituta i laboratoriya patomorfologii (zav.
A.V. Bayeva) Instituta eksperimental'noy biologii i meditsiny
Ministerstva zdravookhraneniya RSFSR.

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Functional connections between blood vessels and sinuses of
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1. Laboratoriya normal'noy i patologicheskoy morfologii (zav.
A.V. Payeva) Instituta eksperimental'noy biologii i meditsiny
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Report on a patient aged 43 in whom, after an operation for acute pancreatic necrosis, fistula persisted discharging about 180-190 ml. of pancreatic juice per 24 hr. Dietetic and medicinal treatment during 5.5 months did not result in closing the fistula, but after 10 X-ray treatments at 50 r., it was completely cured in 4 days. Period of observation lasted 3 yr.   Stuchinskii - Leningrad(IX,14)

Iz khir urgicheskogo otdeleniya klinicheskoy bol'nitsy, Moskova.

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Clinical manifestations of medicinal penicillin allergy. Sov.med.
25 no.7:58-66 Jl '61.   (MIRA 15:1)

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Histaminopexy in allergy. Sov.med. 26 no.7:27-34 Jl '62.
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dent AMN SSSR prof. A.D.Ado) II Moskovskogo meditsinskogo
instituta imeni N.I.Pirogova i klinicheskoy bol'nitsy (glavnyy
vrach - kand.med.nauk A.I.Artem'yev).
(ALLERGY)   (HISTAMINE)

BORODIN, Yu.P.

Immunological study of allergy to penicillin. Vestn. Akad. med. nauk SSSR 18 no.4:69-77 '63   (MIRA 17:4)

1. Nauchno-issledovatel'skaya allergologicheskaya laboratoriya AMN SSSR.

BORODIN, Yu.P.; YEGOROVA-MEZHEVALOVA, A.G.

Use of a combination of gamma-globulin with histamine (hista-
globin) for the treatment of allergic diseases. Sovet. med.
26 no.5:74-79 My'63   (MIRA 17:1)

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i Klinicheskoy bol'nitsy (glavnyy vrach - kand. med. nauk A.I.
Artem'yev), Moskva.

BORODIN, Yu.P.

Antibodies to penicillin. Sov.Med. 27 no.7:74-78 Jl'63.
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AMN SSSR i Klinicheskoy bol'nitsy 'glavnyy vrach - kand.med.
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Turbidimetric method for the determination of general lipids in liver tissue. Sov. med. 27 no.8:117-118 Ag '64.

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Concerning I.L.Sagoian's article "Determination of the sensitivity
to streptomycin in pulmonary tuberculosis patients." Sov. med. 28
no.1:146-147 Ja '65.   (MIRA 18:5)

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(zav. - chlen-korrespondent AMN SSSR prof. A.D.Ado) AMN SSSR,
Moskva.

PHASE I   BOOK EXPLOITATION   SOV/3970

Borodin, Yuriy Pavlovich

Mashinist elektricheskogo krana; uchebnik dlya proizvodstvenno-
    tekhnicheskogo obucheniya rabochikh (Electric Crane Operator;
    Textbook For Technical Training of Workers) Sverdlovsk, Metal-
    lurgizdat, Sverdlovskoye otdeleniye, 1958. 192 p. Errata slip
    inserted. 9,000 copies printed.

Ed.: V.P. Smol'nikov; Ed. of Publishing House: B.E. Berman; Tech.
    Ed.: Ye.M. Zef.

PURPOSE: This book is a textbook for electric crane operators who
    wish to improve their qualifications, and may also be used as a
    hand-book in crane operation.

COVERAGE: The book contains information on metals and alloys used
    in the manufacture of electric crane equipment, information on
    mechanics and electrical engineering, designs of metallurgical
    plant cranes, and principles of their operation and advanced

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Electric Crane Operator; (Cont.)   SOV/3970

methods of servicing them. No personalities are mentioned.
There are no references.

TABLE OF CONTENTS:

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Ye.D., tekhn.red.

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bochikh. Izd.2., dop. Sverdlovsk, Gos. nauchno-tekhn. izd-
vo lit-ry po chernoi i tsvetnoi metallurgii, 1961. 249 p.
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(Electric cranes)

BORODIN, Yuriy Pavlovich

[Operator of electric cranes] Mashinist elektricheskogo krana. Moskva, Metallurgiia, 1965. 275 p.
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MERVART, Iozef [Mervart, Josef]; ZOTOV, B.D.[translator]; SEMENOV,
    I.I.[translator]; ROGINSKIY, G.S., prof., red.; BORODIN,
    Yu.V., red.; GOLICHENKOVA, A.A., tekhn. red.; REZUKHOVA, A.G.,
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    [Price determination in international commerce]TSenoobrazova-
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    G.S.Roginskogo. Moskva, Izd-vo inostr. lit-ry, 1962. 350 p.
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        (Prices)   (Commerce)

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    expenses. Avt.prom. 29 no.9:42-44 S '63.   (MIRA 16:9)
       (Industrial management) (Mathematical statistics)

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BORODINA, E. N.

PHASE I BOOK EXPLOITATION   SOV/6181

Ural'skoye soveshchaniye po spektroskopii. 3d, Sverdlovsk, 1960.
   Materialy (Materials of the Third Ural Conference on Spectros-
   copy) Sverdlovsk, Metallurgizdat, 1962. 197 p. Errata slip
   inserted. 3000 copies printed.

Sponsoring Agencies: Institut fiziki metallov Akademii nauk SSSR.
   Komissiya po spektroskopii; and Ural'skiy dom tekhniki VSNTO.

Eds. (Title page): G. P. Skornyakov, A. B. Shayevich, and S. G.
   Bogomolov; Ed.: Gennadiy Pavlovich Skornyakov; Ed. of Publish-
   ing House: M. L. Kryzhova; Tech. Ed.: N. T. Mal'kova.

PURPOSE: The book, a collection of articles, is intended for staff
   members of spectral analysis laboratories in industry and scien-
   tific research organizations, as well as for students of related
   disciplines and for technologists utilizing analytical results.

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Materials of the Third Ural Conference (Cont.)   SOV/6181

COVERAGE: The collection presents theoretical and practical prob-
   lems of the application of atomic and molecular spectral analy-
   sis in controlling the chemical composition of various materials
   in ferrous and nonferrous metallurgy, geology, chemical indus-
   try, and medicine. The authors express their thanks to G. V.
   Chentsova for help in preparing the materials for the press.
   References follow the individual articles.

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